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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,102	07/22/2003	Pedro M. Buarque De Macedo	50699/11	8891

1912 7590 09/11/2006

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EXAMINER

SAFAVI, MICHAEL

ART UNIT	PAPER NUMBER
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3673

DATE MAILED: 09/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary**Application No.**

10/625,102

Applicant(s)

BUARQUE DE MACEDO, PEDRO M.

Examiner

M. Safavi

Art Unit

3673

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,5,13,14,23,27,29-31,37,42-47,51-59 and 63-66 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5,13,14,23,27,29-31,37,42-47,51-59 and 63-66 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 6/26/06.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 26, 2006 has been entered.

Claim Objections

Claims 14 and 53 are objected to because of the following informalities: Each of claims 14 and 53 recite "said tension member is comprised of tension bolts." However, it would appear that a "tension member" is comprised of --a tension bolt--. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 5, 13, 14, 23, 27, 29-31, 37, 42-47, 51-59 and 63-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grady, II (U.S. Patent No.

4,324,037) in view of either Zeinetz (U.S. Patent No. 3,292,316) or Lagendijk (U.S. Patent No. 4,450,656) when considering either of Williams et al. (U.S. Patent No. 4,124,365) or Blaha (U.S. Patent No. 3,056,184) and further considering any of Jones et al. (U.S. Patent No. 3,459,565), Elmer et al. (U.S. Patent No. 3,592,619) and Ford (U.S. Patent No. 2,758,937).

Grady, II discloses, Figs. 7 and 8, an arrangement, (column), of tile units 82 held together as by tension bolts 90. At least one tile is placed between at least two metal beams 84 and held in compression by the tension bolts 90. Grady, II does not present the tiles 82 as made of a foamed glass.

However, each of Zeinetz and Lagendijk teach utilization of foamed glass tiles or blocks within a tensioned structural arrangement. Fig. 11 of Zeinetz, for example, shows tension bolts 36, 39 holding foamed glass tiles, col. 4, lines 5-9, in place while Figs. 1, 2, and 6 of Lagendijk shows tension members 33, 34, 36, 45, etc. outside of the foamed glass units, holding the foamed glass units in place, col. 3, lines 30-60 and col. 4, lines 34-37.

And, each of Williams et al., as at col. 1, lines 35-43, and Blaha, as at col. 3, lines 24-35, teach utilization of foamed glass tiles or blocks possessing a compressive strength in excess of 1200 psi with Williams et al. teaching a compressive strength on the order of 5,000 to 8,000 psi with each of Williams et al. and Blaha disclosing use of the foam glass as a structural member sufficiently strong for structural purposes within the building industry, col. 1, lines 19-22 of Williams et al. and col. 1, lines 10-28 of Blaha.

Further, each of Jones et al., Elmer et al., and Ford disclose manufacture of foam glass components possessing various density including a density of from 20 to 60 pounds per cubic foot, with a pore size of less than 1mm including a pore size of from 0.1mm to 0.8mm or smaller, col. 5, lines 35-43, col. 7, line 51 and col. 8, lines 5-6 of Jones et al., col. 3, lines 20-29 and lines 65-67 of Elmer et al., and col. 1, lines 45-49 and lines 63-70 of Ford.

Therefore, to have provided the structural column of Grady, II with foamed glass tile units possessing a compressive strength of from 1,000 to 10,000 psi and a pore size of less than 1.0mm including a pore size of from 0.3mm to 0.7mm, in place of the clay or cement units, thus realizing the advantages of such foamed glass units within a structural arrangement, (including for example insulation properties), would have been obvious to one having ordinary skill in the art at the time the invention was made as taught by either of Zeinetz and Lagendijk when considering either of Williams et al. and Blaha and further considering any of Jones et al., Elmer et al., and Ford, (**claims 1, 5, 14, 23, 27, 29, 31, 42-47, 51, 53-59, 63, and 65**). Applying a pre-compressive force of from 1,000 to 5,000 psi to the resulting assembled foam glass units, thus affording as much recovery from the effects of a greater degree of overload, would have constituted a further obvious expedient to one having ordinary skill in the art at the time the invention was made, (**claims 1, 5, 13, 23, 27, 42-47, 52, 54-59, and 63**).

As to **claims 13, 23 and 37**, to have placed the tension bolts 90 under a tension so as to prestress the foamed glass tile units of the resulting Grady, II assembly, thus forming a more strengthened arrangement, would have been obvious to one having

ordinary skill in the art at the time the invention was made with Grady, II showing the tension members outside of the foam glass tile units.

As to **claims 23, 27 54-59, and 63**, the resulting Grady, II assembly discloses a prestressed assembly for use in buildings or other structures comprising: at least one prestressed foam glass tiles, having a prestressed compression of 1000 to 10,000 psi or greater; at least two metal beams 84; and one or more tension members 90, wherein said at least one foam glass tiles are placed between said at least two metal beams and held in compression of at least 1,000 to 5,000 psi by said one or more tension members.

As to **claims 14, 31, 53 and 65**, the resulting Grady, II assembly discloses a prestressed assembly having tension members comprised of tension bolts 90.

As to **claims 30 and 64**, to have formed the metal, force transmitting beams 84 of steel, thus realizing the advantages of such old and well known construction material, would have constituted a further obvious expedient to one having ordinary skill in the art at the time the invention was made.

Claims 1, 5, 13, 14, 42-47, and 51-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ellis (U.S. Patent No. 3,430,397) in view of either Zeinetz (U.S. Patent No. 3,292,316) or Lagendijk (U.S. Patent No. 4,450,656) when considering either of Williams et al. (U.S. Patent No. 4,124,365) or Blaha (U.S. Patent No. 3,056,184) and further considering any of Jones et al. (U.S. Patent No.

3,459,565), Elmer et al. (U.S. Patent No. 3,592,619) and Ford (U.S. Patent No. 2,758,937).

Ellis discloses, Fig. 2, an arrangement, (column), of tile units 12 held together as by tension members 30 or 26/28/30. At least one tile is placed and held in compression by the tension bolts 30 or 26/28/30. Ellis does not present the tile units 12 as made of a foamed glass.

However, each of Zeinetz and Lagendijk teach utilization of foamed glass tiles or blocks within a tensioned structural arrangement. Fig. 11 of Zeinetz, for example, shows tension bolts 36, 39 holding foamed glass tiles, col. 4, lines 5-9, in place while Figs. 1, 2, and 6 of Lagendijk shows tension members 33, 34, 36, 45, etc. outside of the foamed glass units, holding the foamed glass units in place, col. 3, lines 30-60 and col. 4, lines 34-37.

And, each of Williams et al., as at col. 1, lines 35-43, and Blaha, as at col. 3, lines 24-35, teach utilization of foamed glass tiles or blocks possessing a compressive strength in excess of 1200 psi with Williams et al. teaching a compressive strength on the order of 5,000 to 8,000 psi.

Further, each of Jones et al., Elmer et al., and Ford disclose manufacture of foam glass components possessing various density including a density of from 20 to 60 pounds per cubic foot, with a pore size of less than 1mm including a pore size of from 0.1mm to 0.8mm or smaller, col. 5, lines 35-43, col. 7, line 51 and col. 8, lines 5-6 of Jones et al., col. 3, lines 20-29 and lines 65-67 of Elmer et al., and col. 1, lines 45-49 and lines 63-70 of Ford.

Therefore, to have provided the structural column of Ellis with foamed glass tile units possessing a compressive strength of from 1,000 to 10,000 psi and a pore size of less than 1.0mm including a pore size of from 0.3mm to 0.7mm, in place of the clay or cement units, thus realizing the advantages of such foamed glass units within a structural arrangement, (including for example insulation properties), would have been obvious to one having ordinary skill in the art at the time the invention was made as taught by either of Zeinetz and Lagendijk when considering either of Williams et al. and Blaha and further considering any of Jones et al., Elmer et al., and Ford, (**claims 1, 5, 13, 14, 42-47, and 51-53**). Applying a pre-compressive force of from 1,000 to 5,000 psi to the resulting assembled foam glass units, thus affording as much recovery from the effects of a greater degree of overload, would have constituted a further obvious expedient to one having ordinary skill in the art at the time the invention was made, (**claims 1, 5, 13, 14, 42-47, and 51-53**).

As to **claims 13 and 52** to have placed the tension bolts 30, or 26/28/30, under a tension so as to prestress the foamed glass tile units of the resulting Ellis assembly, thus forming a more strengthened arrangement, would have constituted a further obvious expedient to one having ordinary skill in the art at the time the invention was made with Grady, II showing the tension members outside of the foam glass tile units.

As to **claims 14 and 53**, Ellis discloses the tension members may comprise any suitable tension-applying device. Therefore, to have provided tension bolts in place of the straps shown by Ellis would have been a further obvious expedient to one having ordinary skill in the art at the time the invention was made.

Claims 23, 27, 29-31, 37, 54-59 and 63-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ellis (U.S. Patent No. 3,430,397) in view of either Zeinetz (U.S. Patent No. 3,292,316) or Lagendijk (U.S. Patent No. 4,450,656) when considering either of Williams et al. (U.S. Patent No. 4,124,365) or Blaha (U.S. Patent No. 3,056,184) and further considering any of Jones et al. (U.S. Patent No. 3,459,565), Elmer et al. (U.S. Patent No. 3,592,619) and Ford (U.S. Patent No. 2,758,937) as applied to claims 1-5, 13, 14, and 42-53 above, and further in view of Grady, II.

As to **claims 23, 27, 29, 54-59, and 63**, the resulting Ellis assembly discloses a prestressed assembly for use in buildings or other structures comprising: a plurality of prestressed foam glass tiles, having a prestressed compression of 1000 to 5,000 psi or greater; a metal beam 18/20, at the top thereof, and one or more tension members 30, or 26/28/30, with the foam glass tiles are placed between said at least two metal beams and held in compression of at least 1,000 to 5,000 psi by the tension members. The resulting Ellis assembly does not disclose the tiles between two metal, force-transmitting beams.

However, Grady, II teaches applying metal force transmitting beams on either end of a structural arrangement so as to better distribute forces when tension is applied to the respective tension members 90.

Therefore, to have provided the resulting Ellis assembly with a second or lower metal force transmitting beam to cooperate with the upper force transmitting beam, thus effecting a more uniform distribution of forces when tension is applied to the respective

tension members 30, or 26/28/30, would have been obvious to one having ordinary skill in the art at the time the invention was made as taught by Grady, II. To have placed the tension bolts 30, or 26/28/30, under a tension so as to prestress the foamed glass tile units of the resulting Ellis assembly, thus forming a more strengthened arrangement, would have constituted a further obvious expedient to one having ordinary skill in the art at the time the invention was made.

As to **claims 30 and 64**, to have formed the resulting upper and lower metal, force transmitting beams 18/20 of steel, thus realizing the advantages of such old and well known construction material, would have constituted a further obvious to one having ordinary skill in the art at the time the invention was made.

As to **claims 31 and 65**, Ellis discloses the tension members may comprise any suitable tension-applying device. Therefore, to have provided tension bolts in place of the straps shown by Ellis would have been a further obvious expedient to one having ordinary skill in the art at the time the invention was made.

As to **claims 37 and 66**, the resulting Ellis assembly discloses that the tension members are not within the foam glass tiles.

Response to Arguments

Applicant's arguments with respect to claims 1, 5, 13, 14, 23, 27, 29-31, 37, 42-47, 51-59 and 63-66 have been considered but are not persuasive. As for Applicant's remarks found at the top of page 11 of the response, each of Zeinetz '316 and Lagendijk '656 teach and suggest prestressing of foam glass tiles under any amount of

prestress compression. Otherwise, it is not clear as to what Applicant is alluding by reference to col. 3, lines 73-74 of the Zeinetz '316 reference. And, Zeinetz '316 may suggest a load-sustaining layer made of concrete but such is with respect to a panel as suggested in lines 5-8 of col. 4. In other words, when a moisture-insulating layer is utilized it may be combined with one of the structural panels recited within lines 5-8 of col. 4. Lines 7-8 in col. 4 of Zeinetz '316 do not disclose that only a concrete structural panel be utilized. Applicant's arguments with respect to Lagendijk '656 have been reviewed but are not persuasive. Lagendijk '656 does indeed, teach utilization of foamed glass blocks within a tensioned structural arrangement as presented, for example, at lines 30-6- in col. 3 and lines 34-37 in col. 4.

As for Applicant's argument within the full paragraph on page 12 of the response, each of Lagendijk '656 and Zeinetz '316 does indeed, disclose prestressing of a foamed glass material as is set forth in the above rejection.

As for Applicant's arguments of *prima facie* obviousness, presented generally throughout the response of June 26, 2006, the rationale to modify or combine the prior art does not have to be expressly stated in the prior art; the rationale may be expressly or impliedly contained in the prior art or it may be reasoned from knowledge generally available to one of ordinary skill in the art, established scientific principles, or legal precedent established by prior case law. *In re Eli Lilly & Co.*, 902 F.2d 943, 14 USPQ2d 1741 (Fed. Cir. 1990); *In re Nilssen*, 851 F.2d 1401, 1403, 7 USPQ2d 1500, 1502 (Fed. Cir. 1988) (references do not have to explicitly suggest combining teachings); *Ex parte*

Clapp, 227 USPQ 972 (Bd. Pat. App. & Inter. 1985) (examiner must present convincing line of reasoning supporting rejection).

As for Applicant's arguments from the middle of page 13 to the middle of page 15 of the response, each of Williams et al. and Blaha disclose use of the foam glass as a structural member sufficiently strong for structural purposes within the building industry, col. 1, lines 19-22 of Williams et al. and col. 1, lines 10-28 of Blaha, Applicant's reference to "hollow elongate cylinders" notwithstanding.

In further response to Applicant's arguments presented within the response of June 26, 2006, and with particular reference to Applicant's arguments directed to obviousness or *prima facie* obviousness, Examiner reiterates arguments presented within the final Office action of March 03, 2006.

As for Applicant's arguments to motivation or suggestion, "in considering the disclosure of a reference, it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom." *In re Preda*, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968).

The strongest rationale for combining references is a recognition, expressly or impliedly in the prior art or drawn from a convincing line of reasoning based on established scientific principles or legal precedent, that some advantage or expected beneficial result would have been produced by their combination. *In re Sernaker*, 702 F.2d 989, 994-95, 217 USPQ 1, 5-6 (Fed. Cir. 1983).

With regard to Applicant's arguments to a particular prestress compression or compression strength, "Generally, it is not invention to change size or degree of thing or of any feature or function of machine or manufacture; there is no invention where change does not involve different concept, purposes, or objects, but amounts to doing same thing substantially the same way with better results." *Hobbs v. Wisconsin Power and Light Company et al.* 115 USPQ 371 (CA 7 1957). Making something that is merely stronger or longer lasting than prior art is not sort of innovation for which patent monopoly is granted. Or, mere change in material cannot give rise to patentable invention where properties of materials are already known and result obtained was one to be expected; similarly, mere substitution of one, even superior, material for another in existing product or structure is ordinarily deemed to be obvious. *Brunswick Corporation v. Champion Spark Plug Company* 216 USPQ 1 (CA 7 1982).

In the instant case, and with regard to a convincing line of reasoning sought in *Ex parte Clapp*, one having ordinary skill in the building construction industry would have found it obvious to employ a foam glass tile or block having a necessary high compression strength as by applying the teachings of the applied references to arrive at a foam glass unit having a pore size of 1mm or less, (extracted from teachings of Jones et al. '565, Elmer et al. '619 and Ford '937), while providing for a block possessing a compression strength of 10,000 pounds per square foot, (extracted from at least the teachings of Williams et al. '365 which recognizes foam glass as an appropriate substitute for building construction tiles and blocks necessarily possessing a compression strength of at least 5,000 to 8,000 psi as well as from each of Jones et al.

'565, Elmer et al. '619 and Ford '937 which recognizes the relationship between foam glass pore size and density or compression strength). Thus, those having ordinary skill in the building construction industry when considering all the applied references before them would have found it obvious to combine the principles and teachings of any of Jones et al. '565, Elmer et al. '619 and Ford '937 with either of Williams et al. '365 and Blaha '184 to produce a high strength foam glass building module that is to be assembled in a prestressed, (as by precompression), fashion, as is taught by either of Zeinetz '316 and Legendijk '656, while utilizing the particular construction assembly of either of Grady, II '037 or Ellis '397 in order to arrive at the instantly claimed invention.

All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Safavi whose telephone number is (571) 272-7046. The examiner can normally be reached on Mon.-Thur., 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patricia Engle can be reached on (571) 272-6660. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



M. Safavi
September 04, 2006

MICHAEL SAFAVI
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ART UNIT 351